

CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

REVISED MONITORING AND REPORTING PROGRAM NO. R5-1999-0016-R01

NPDES NO. CA0004111

FOR
AEROJET-GENERAL CORPORATION

SACRAMENTO COUNTY

Tentative

This Monitoring and Reporting Program has been revised to include the elimination of monitoring at Outfalls 007, 007A, 007B, 007C and 007D. Outfall 007 is associated with the F Zone treatment unit which no longer exists. Outfall 007A collects rainfall in F Area where industrial activity no longer exists. Outfalls 007B and 007D are associated with Test Stands G-1, G-2, G-3 and G-8 that are no longer in use and have been, or are in the process of, being demolished. Outfall 007C has been removed from J Zone. Revisions have also been made to the frequency of monitoring Outfalls 007E and 008 where industrial activities happen infrequently and the revised monitoring frequency is tied to those activities. In addition, the Practical Quantitation Level requirement for N-nitrosodimethylamine has been lowered to 0.005 µg/L based on improvements in the analytical method.

I. MONITORING PROGRAM

A. General Requirements

1. The Dischargers shall comply with Section C., Provisions for Monitoring in the Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES), dated 1 March 1991, and subsequent addenda.
2. The Dischargers shall collect, store, preserve, and analyze all samples according to EPA guidelines or procedures approved by the Board.

B. Discharges

1. The Dischargers shall maintain a written record of wastewater and storm water discharges to Buffalo Creek through outfall locations 001, 002, 002A, 003, 004, 005, 006, and 007E as shown on Attachments C and D, attached to this Program.
 - a. The record shall include:
 - 1) Date and time of discharge;
 - 2) Outfall location through which the discharge passes;
 - 3) Volume of discharge (gallons); and
 - 4) Duration of discharge.
2. The Dischargers shall maintain a written record of wastewater discharges to F-Area Lake (Buffalo Creek) through Outfall 008, as shown on Attachments C and D, attached to this

Program.

- a. The record shall include:
 - 1) Date and time of discharge;
 - 2) Outfall location through which the discharge passes;
 - 3) Volume of discharge (gallons); and
 - 4) Duration of discharge.
3. The Dischargers shall collect, according to the schedule below, grab samples of any discharges or planned discharges to Buffalo Creek through Outfalls 001, 002, 002A, 003, 004, and 005, and shall analyze according to the schedule below, each sample for the chemical constituents specified in Section I.E., below.
 - a. The sample collection and analysis schedule shall be as follows:
 - 1) Whenever possible, collect samples and complete the analysis before discharge is scheduled to begin; analyze the samples for the chemical constituents in Group A, Group B, Group C, the volatile compounds in Group D, and NDMA in Group E.
 - 2) If samples cannot be collected before the discharge begins, collect samples within the first hour of discharge; analyze the samples for the chemical constituents in Group A, Group B, Group C, the volatile compounds in Group D, and NDMA in Group E.
 - 3) If the discharge continues more than five days, continue sampling weekly for the chemical constituents in Group A, Group B, Group C, the volatile compounds in Group D, and NDMA in Group E.
 - 4) One of the samples collected during the discharge each month shall be analyzed additionally for the acid and base neutral compounds of Group D.
4. The Dischargers shall collect a single grab sample of the discharge to F-Area Lake (Buffalo Creek) through outfall 008 weekly, during periods of discharge; and shall analyze each sample for the volatile organic compounds in Group D and the chemical constituents in Group E as specified in Section I.E., below. If previous analysis on samples from outfall 008 have not detected chemical constituents and no industrial activity has taken place in the area contributing flow to outfall 008, then samples need not be collected again until industrial activities occur in that area.
5. 5.. The Dischargers shall collect a single grab sample of the discharge from Outfall 007E prior to the discharge of storm water, and shall analyze the sample for the constituents in Group D and Group E, except hydrazines. If previous analysis on samples from outfall 007E have not detected chemical constituents and no industrial activity has taken place in the area contributing flow to outfall 007E, then samples need not be collected again until industrial activities occur in that area.

C. Spills

1. The Dischargers shall maintain a written record of any spills of waste that discharge to Buffalo Creek and to its tributaries.
 - a. The record shall include:
 - 1) Date and time of spill;
 - 2) Location of spill;
 - 3) Quantity of waste spilled;
 - 4) Duration of spill;
 - 5) Quality characteristics of waste spilled, including results of any laboratory or field analyses; and
 - 6) Disposition of, or response to spill event.

D. Receiving Waters

1. The Dischargers shall establish and maintain the following stations for sampling surface water flow in the receiving waters, as shown in Attachment C, attached to this Program.
 - a. Station S-1, on Buffalo Creek near Illinois Street and known as "Buffalo Creek at Line 02".
 - b. Station S-2, on the Administrative Ditch (which flows to Buffalo Creek) at Alabama Avenue and Arizona Avenue and known as "Alabama 20."
 - c. Station S-3, on Buffalo Creek between State Highway 50 and West Lake, downstream of outfall location 005.
 - d. Station S-4, on Buffalo Creek in F-Area Lake.
 - e. Station S-5, on Alder Creek as it enters Aerojet property to the west of Prairie City Road.
 - f. Station S-6 on Alder Creek as it leaves Aerojet property east of Folsom Boulevard.
2. The Dischargers shall collect single grab samples at Station S-1 and S-2 three days per week. The samples shall be analyzed for the volatile organic compounds of Group D specified in Section I.E., below, and for the following constituents:
 - a. Hydrogen Ion (pH);
 - b. Electrical Conductivity ($\mu\text{mhos/cm}$);
 - c. Perchlorate (ClO_4 in mg/l);
 - d. Total Ammonia (mg/l as N);
 - e. Dissolved Oxygen (mg/l); and

f. Nitrate (mg/l as N).

Samples will be collected only when there is sufficient flow past the stations. At stations S-1 and S-2, a minimum of one sample per week will be collected.

3. The Dischargers shall collect once per three-month period at Stations S-1, S-2, S-5, and S-6, grab samples of stream flow; and analyze each sample (one sample per quarter per station) for the chemical constituents in Group A and Group B as specified in Section I.E., below.
4. The Dischargers shall collect grab samples of stream flow two times per year, separated by approximately a six-month interval to represent wet weather flows and dry weather flows, at Stations S-1, S-2, S-5, and S-6; and analyze each sample (two samples per year per station) for the chemical constituents in Group C (both total and dissolved metals) and Group D, as specified in Section I.E., below.
5. During the times that flows are discharged through outfall locations 001, 002, 003, 004, and 005, the Dischargers shall collect weekly grab samples at Station S-3 and shall analyze each sample for chemical constituents in Group A, Group B, Group C (both total and dissolved metals), the volatile organics of Group D, and NDMA of Group E, as specified below in Section I.E. Monthly samples shall be collected for the acid/base neutral compounds of Group D.
6. During times that flows are discharged through outfall 006, the Dischargers shall collect weekly grab samples at Station S-4; and shall analyze each sample for the volatile organic compounds of Group D as specified below in Section I.E., and the chemical constituents in Group E as specified below in Section I.E. (except to determining compliance with Receiving Water Limitations No.9, for which a minimum of four samples shall be collected simultaneously).
7. The Dischargers shall observe and record the time that any grab samples are collected, and the condition and characteristics of the receiving waters at Stations S-1, S-2, S-3, S-4, S-5, and S-6.
 - a. The Dischargers shall note in particular the presence or absence of:
 - 1) Oil, grease, scum, and floating or suspended matter;
 - 2) Discoloration;
 - 3) Fungus, slimes, or other objectionable growths;
 - 4) Bottom deposits; and
 - 5) Aquatic life.

E. Chemical Constituents

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1. Group A

<u>Constituents</u>	<u>Units</u>	<u>Test Method¹</u>	<u>Quantitation Limit²</u>
Chemical Oxygen Demand	mg/l	410.1/410.2	6
Total Organic Halogen	µg/l	9020	30
pH	pH units	Field/meter or 150.1, 9040	---
Total Suspended Solids	mg/l	160.2	6
Oil and Grease	mg/l	413.1	10
Ammonia-Nitrogen (NH ₃ -N)	mg/l	350.3	0.1
Total Nitrogen	mg/l	351.3	0.1
Chlorine Residual	mg/l	330.5	0.01
Dissolved Oxygen	mg/l	360.2	---
Turbidity	NTUs	180.1	1
Temperature	°F	Field/thermometer	---

¹ Or an equivalent method

² Practical Quantitation Limit

Group B

<u>Constituents</u>	<u>Units</u>	<u>Test Method¹</u>	<u>Quantitation Limit²</u>
Total Hydrazines	mg/l	PAL-EA-0029	0.0050(each hydrazine)
Nitrate (as N)	mg/l	300.0	0.05
Perchlorate	mg/L	PAL-EA-0035 or 0040	0.004
Sodium	mg/l	6010	0.80
Total Dissolved Solids	mg/l	160.1	30
Electrical Conductivity	µhmos/cm	Field/meter or 120.1	---

¹ Or an equivalent method

² Practical Quantitation Limit

Group C

<u>Constituents</u>	<u>Units</u>	<u>Test Method¹</u>	<u>Quantitation Limit²</u>
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<u>Constituents</u>	<u>Units</u>	<u>Test Method</u> ¹	<u>Quantitation Limit</u> ²
Antimony	mg/l	7041	0.005
Arsenic	mg/l	7060	0.002
Barium	mg/l	6010	0.005
Beryllium	mg/l	6010	0.001
Cadmium	mg/l	6010	0.001
Hexavalent Chromium	mg/l	7196	0.010
Total Chromium	mg/l	6010	0.005
Copper	mg/l	6010	0.005
Iron	mg/l	6010	0.075
Lead	mg/l	7421	0.002
Manganese	mg/l	6010	0.010
Mercury	mg/l	7470	0.0002
Nickel	mg/l	6010	0.005
Silver	mg/l	6010	0.005
Zinc	mg/l	6010	0.010
Total Hardness (as CaCO ₃)	mg/l	6010/Calculation	---

¹ Or an equivalent method

² Practical Quantitation Limit

Group D

<u>Constituents</u>	<u>Units</u>	<u>Test Method</u> ^{1,2}	<u>Quantitation Limit</u> ³
Acrolein	µg/l	601/602 or 624/8240/8260	0.5 or 50
Acrylonitrile	µg/l	601/602 or 624/8240/8260	0.5 or 50
Benzene	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
Carbon Tetrachloride	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
Chlorobenzene	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
1,2-Dichloroethane	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
1,1,1-Trichloroethane	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
1,1-Dichloroethane	µg/l	601/602 or 624/8240/8260	0.5 or 5.0

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<u>Constituents</u>	<u>Units</u>	<u>Test Method</u> ^{1,2}	<u>Quantitation Limit</u> ³
1,1,2-Trichloroethane	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
1,1,2,2-Tetrachloroethane	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
Chloroethane	µg/l	601/602 or 624/8240/8260	0.5 or 10
2-Chloroethylvinyl ether	µg/l	601/602 or 624/8240/8260	0.5 or 10
Chloroform	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
1,1-Dichloroethylene	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
1,2-Trans-dichloroethylene	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
1,2-Dichloropropane	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
1,3-Dichloropropylene	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
Ethylbenzene	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
Methylene Chloride	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
Methyl Chloride	µg/l	601/602 or 624/8240/8260	0.5 or 10
Methyl Bromide	µg/l	601/602 or 624/8240/8260	0.5 or 10
Bromoform	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
Dichlorobromomethane	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
Trichlorofluoromethane	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
Dichlorodifluoromethane	µg/l	601/602 or 624/8240/8260	0.5 or 10
Chlorodibromomethane	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
Tetrachlorethylene	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
Toluene	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
Trichloroethylene	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
Vinyl Chloride	µg/l	601/602 or 624/8240/8260	0.5 or 10
Xylenes	µg/l	601/602 or 624/8240/8260	0.5 or 5.0
2,4,6-Trichlorophenol	µg/l	625/8270	10
p-Chloro-m-Cresol	µg/l	625/8270	20
2-Chlorophenol	µg/l	625/8270	10
2,4-Dichlorophenol	µg/l	625/8270	10
2,4-Dimethylphenol	µg/l	625/8270	10
2-Nitrophenol	µg/l	625/8270	10
2,4-Dinitrophenol	µg/l	625/8270	50

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<u>Constituents</u>	<u>Units</u>	<u>Test Method</u> ^{1,2}	<u>Quantitation Limit</u> ³
4,6-Dinitro-o-Cresol	µg/l	625/8270	50
Pentachlorophenol	µg/l	625/8270	50
Phenol	µg/l	625/8270	10
Acenaphthene	µg/l	625/8270	10
Benzidine	µg/l	625/8270	50
1,2,4-trichlorobenzene	µg/l	625/8270	10
Hexachlorobenzene	µg/l	625/8270	10
Hexachloroethane	µg/l	625/8270	10
Bis(2-chloroethyl)ether	µg/l	625/8270	10
2-Chloronaphthalene	µg/l	625/8270	10
1,2-Dichlorobenzene	µg/l	625/8270	10
1,3-Dichlorobenzene	µg/l	625/8270	10
1,4-Dichlorobenzene	µg/l	625/8270	10
3,3'-Dichlorobenzidine	µg/l	625/8270	20
2,4-Dinitrotoluene	µg/l	625/8270	10
2,6-Dinitrotoluene	µg/l	625/8270	10
1,2-Diphenylhydrazine	µg/l	625/8270	10
Fluoranthene	µg/l	625/8270	10
4-Chlorophenyl phenyl ether	µg/l	625/8270	10
4-Bromophenyl phenyl ether	µg/l	625/8270	10
Bis(2-chloroisopropyl) ether	µg/l	625/8270	10
Bis(2-chloroethoxy) methane	µg/l	625/8270	10
Hexachlorobutadiene	µg/l	625/8270	20
Hexachlorocyclopentadiene	µg/l	625/8270	10
Isophorone	µg/l	625/8270	10
Naphthalene	µg/l	625/8270	10
Nitrobenzene	µg/l	625/8270	10
N-nitrosodiphenylamine	µg/l	625/8270	10
N-nitrosodi-n-propylamine	µg/l	625/8270	10

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<u>Constituents</u>	<u>Units</u>	<u>Test Method</u> ^{1,2}	<u>Quantitation Limit</u> ³
Bis(2-ethylhexyl) phthalate	µg/l	625/8270	50
Butyl benzyl phthalate	µg/l	625/8270	10
Di-n-butyl phthalate	µg/l	625/8270	20
Di-n-octyl phthalate	µg/l	625/8270	10
Diethyl phthalate	µg/l	625/8270	10
Dimethyl phthalate	µg/l	625/8270	10
Benzo(a)anthracene	µg/l	625/8270	10
Benzo(a)pyrene	µg/l	625/8270	10
3,4-Benzofluoranthene	µg/l	625/8270	10
Benzo(k)fluoranthene	µg/l	625/8270	10
Chrysene	µg/l	625/8270	10
Acenaphthylene	µg/l	625/8270	10
Anthracene	µg/l	625/8270	10
Benzo(g,h,i)perylene	µg/l	625/8270	10
Fluorene	µg/l	625/8270	10
Phenanthrene	µg/l	625/8270	10
Dibenzo(a,h)anthracene	µg/l	625/8270	10
Indeno(1,2,3-cd)pyrene	µg/l	625/8270	10
Pyrene	µg/l	625/8270	10

¹ Or an equivalent method. For example EPA Methods 8010, 8020, 8240, and 500 Series Methods.

² Discharges from West Lake and sampling at Station S-3 shall be by both methods 8240 and 601/602 (8010, 8020)/8260.

³ Practical Quantitation Limit. First value is for the first test method(s) and the second value is for the second test method(s).

Group E

<u>Constituents</u>	<u>Units</u>	<u>Test Method</u> ¹	<u>Quantitation Limit</u> ²
Nitrate (as N)	mg/l	300.0	0.05
Nitrite (as N)	mg/l	300.0	0.05
Hydrazine	µg/l	PAL-EA-0029	5.0
Methylhydrazine	µg/l	PAL-EA-0029	5.0

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<u>Constituents</u>	<u>Units</u>	<u>Test Method</u> ¹	<u>Quantitation Limit</u> ²
1,1-Dimethylhydrazine	µg/l	PAL-EA-0029	5.0
pH	pH units	Field/meter or 150.1/9040	-----
N-nitrosodimethylamine	µg/l	PAL-EA-0036	0.005 (0.001 Detection Limit)
Chlorine Residual	mg/l	Field/meter or 330.5	0.01

¹ Or an equivalent method

² Practical Quantitation Limit

Library searches shall be completed on all chromatographic peaks equal to or greater than 25 percent of the internal standard for chemical constituents that are not listed in Group D.

F. Three Species Chronic Toxicity Monitoring

Chronic toxicity monitoring shall be conducted to determine whether the effluent is contributing toxicity to Buffalo Creek. The testing shall be conducted as specified in EPA 600/4-89-001. Chronic toxicity samples shall be collected at the discharge from West Area Lake to Buffalo Creek. Samples collected from the outlet shall be representative of the volume and quality of the discharge. Time of collection of the samples shall be recorded. Chronic toxicity monitoring shall include the following:

Species: *Pimephales promelas, Ceriodaphnia dubia, Selanstrum carpicornutum*

Frequency: Four times in the year prior to submittal of the permit renewal application

Dilution Series: 100 percent effluent

Six months prior to conducting the toxicity monitoring, the Dischargers shall submit a plan to conduct the testing for approval by Regional Board staff.

II. REPORTING PROGRAM

A. General Requirements

1. The Discharge shall comply with Section B, General Reporting Requirements and with Section D, Reporting Requirements for Monitoring in the Standard Provisions and Reporting Requirements (NPDES), dated 1 March 1991 and subsequent addenda.
2. The Dischargers shall report in writing to the Regional Board all information and data required by the Monitoring Program specified above.
3. The Dischargers shall report all monitoring information and data in tabular form so that dates, times, parameters, constituents, observations, measurements, determinations, concentrations, units, and locations are clearly understandable. Such reporting manifests should clearly demonstrate compliance and/or noncompliance with waste discharge requirements.
4. If the Dischargers performs the monitoring that is required by the above Monitoring Program either at locations or at more frequent times other than those designated above, then the Dischargers shall include the results of such monitoring in the required reports. The reports shall clearly indicate any such additional or different locations and increased frequency. If the Dischargers conducts other monitoring of Buffalo Creek or discharges thereto that is not required under Order No. 99-016, then the Dischargers shall inform the Regional Board of such activities and provide results at the Board's request.
5. If no event requiring monitoring occurred during the monitoring period, then the Dischargers shall so state and explain in the report.
6. Monitoring results shall be submitted to the Regional Board **within 45 days** following the last day of the monitoring period (monthly).
7. The Dischargers may also be requested to submit an annual report to the Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with waste discharge requirements.

B. Discharges

1. The Dischargers shall notify the Regional Board either by letter or by telephone when wastewater and storm water are being or will be discharged into Buffalo Creek through outfall locations 001, 002, 002A, 003, 004, 005, 006, 007, and 008. Such notification shall be made as early as practicable to allow on-site observation or testing by Regional Board staff. When discharges are occurring or are expected to occur at routine times or periods, Aerojet shall provide the Board with proposed schedules for discharges. Such schedules may serve as the appropriate notice.

C. Spills

1. The Dischargers shall immediately notify the Regional Board by telephone of any spills of waste discharging to Buffalo Creek, the Administration Ditch, Rebel Hill Ditch, or Alder Creek, or any tributaries or canals tributary to those waterways.
2. The Dischargers shall prepare a report for monitoring task I.C.1. The report shall be transmitted within **ten days** after the spill occurred.

D. Chemical Constituents

1. The Dischargers shall report all constituents as listed in the tables in Section I.E. above. The Dischargers shall also report, by identification and quantification, all chromatographic peaks equal to or greater than 25 percent of the internal standard for chemical constituents that are not listed in Group D.

The Discharger shall implement the above monitoring program for monitoring conducted after the effective date of this Order.

Ordered by: _____
PAMELA C CREEDON,, Executive Officer

(Date)

AMM:2/7/07